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MOISTURE PROBLEMS AND VENTILATION

TEXAS AGRICULTURAL EXTENSION SERVICE

The Texas A&M University System

Dear Energy Saver:

Proper ventilation and placement of vapor barriers can help to control unwanted moisture within your home. When moisture is controlled, insulation in attics, walls and floors will function properly; heating and cooling requirements are lessened; family members are more comfortable and healthier; and mildew and rotting problems on furniture, furnishings and construction materials can be controlled.

This letter series and other educational programs are provided at no charge by the Texas Agricultural Extension Service. This information will help you reduce the energy consumption in your home. If you would like to receive other publications or know more about Extension programs, please contact me.

Sincerely,

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County Extension Agent

The Texas A&M University System, U.S. Department of Agriculture and the County Commissioners' Courts of Texas Cooperating

L-1634

TEXAS AGRICULTURAL EXTENSION SERVICE

The Texas A&M University System

Save Home Energy

MOISTURE PROBLEMS AND VENTILATION

Internal moisture problems are created by normal activities in the home, such as cooking, laundering, bathing and breathing. In fact, about 18 gallons of water vapor can be produced in one week by a family of four. When moisture-laden air comes in contact with a cold surface, some of the moisture leaves the air and forms condensation, or drops of water, on the cold surface, thus causing problems of mildew and sweating walls and windows.

Moisture problems can be controlled in three ways:

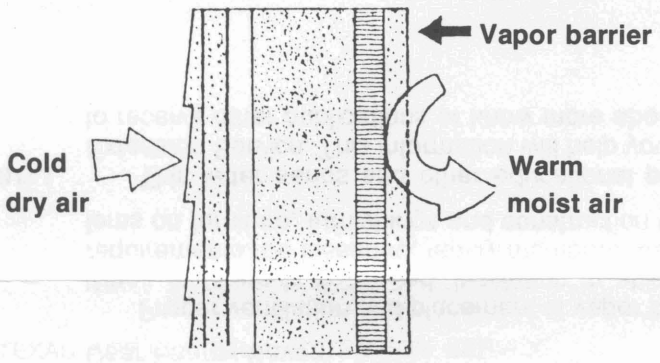
- Reduce the amount of moisture produced by decreasing bathing time, by not boiling water or liquids excessively when cooking and by washing only full loads of laundry
- Use vapor barriers
- Have adequate year-round ventilation

VAPOR BARRIERS

A vapor barrier is a material that allows only very small amounts of moisture to flow from one surface to another. Vapor barriers should be installed near the warm surface of walls, ceilings or floors.

The vapor barrier must be continuous and unbroken to be effective and prevent passage of moisture around the barrier. Rips and tears should be repaired by taping or patching with polyethylene or duct tape.

Only materials that are highly resistant to vapor flow should be used as vapor barriers.



A vapor barrier prevents warm moist air from coming into contact with cold surfaces.

Materials that best serve this purpose include polyethylene film (4 to 6 mil.); aluminum or other metal foil; duplex (laminated) papers containing a continuous asphalt film between two sheets of paper; and surface-coated and glazed asphalt-saturated building paper (not the same as ordinary roofing felt or building papers).

VENTILATION

It is difficult to reduce drastically the amount of moisture within and without a house. Vapor barriers cannot completely stop moisture flow, but additional protection from moisture problems can be obtained with proper ventilation.

Attic ventilation is essential year-round and can be achieved through various types of vent systems. Best results are obtained when the ventilation is uniformly distributed along the roof and equally divided between high and low areas. Effective attic vent systems will keep the attic cooler in the summer and dryer in the winter.

It is important to provide ventilation in the attic in the winter as well as in the summer. Do not close all the vents in an insulated house in the winter. Insulation will keep the heat in the house, while the open vents let unwanted moisture vapor escape. If vents are covered, moisture-laden air will reach the cold roof surface, condense, and fall into attic insulation. On extremely cold days this moisture may freeze in the insulation.

Ventilation in crawl spaces allows water vapor to escape before it moves into wood and living spaces. A minimum of two vents are required for crawl spaces.

With a ground moisture barrier, allow 1 square foot of free vent area for each 1,500 square feet of foundation space. Without a moisture barrier, ten times as much ventilation area is required.

Vents for crawl spaces should be left open in winter unless a ground moisture barrier is used. Screens, grills or shutters will keep unwanted animals and pests out from under the house.

Prepared by Extension housing and home furnishings specialists, The Texas A&M University System.

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THE TEXAS A&M UNIVERSITY SYSTEM
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